

CLAIMS

1. A method of correlating a sampled direct sequence spread spectrum signal with a locally provided replica signal containing a spreading code comprising the steps of:
- combining the bit or bits of at least two signal samples of the received signal to form a first word;
 - providing a second word containing bits corresponding to the replica signal; and
 - executing one or more software based instructions to process the first and second words in order to obtain a correlation value.
2. A method according to claim 1 wherein the processing of the first and second words is done using hardwired circuitry.
3. A method according to claim 1 wherein the processing of the first and second words includes a word based XOR operation or its inverse and a summation of the results of that operation.
4. A method according to claim 1 wherein a software based instruction is executed to form the first word.
5. A method according to claim 1 wherein each sample of the spread spectrum signal contains at least one magnitude bit and a sign bit; wherein the first word is formed by combining the magnitude bit or bits of at least two signal samples; wherein a third word is formed by combining the sign bit of at least two signal samples; and wherein one or more software based instructions are executed to process the first, second and third words in order to obtain a correlation value.

6. A signal processor configured for correlating a sampled direct sequence spread spectrum signal with a locally provided replica signal containing a spreading code by combining the bit or bits of at least two signal samples of the received signal to form a first word, providing a second word containing
5 bits corresponding to the replica signal, and executing one or more software based instructions to process the first and second words in order to obtain a correlation value.

7. A signal processor according to claim 6 wherein the processing of the
10 first and second words is done using hardwired circuitry.

8. A signal processor according to claim 6 wherein the processing of the first and second words includes a word based XOR operation or its inverse and a summation of the results of that operation.
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9. A signal processor according to claim 6 wherein a software based instruction is executed to form the first word.

10. A signal processor according to claim 6 wherein each sample of the spread spectrum signal contains at least one magnitude bit and a sign bit;
20 wherein the first word is formed by combining the magnitude bit or bits of at least two signal samples; wherein a third word is formed by combining the sign bit of at least two signal samples; and wherein one or more software based instructions are executed to process the first, second and third words in order
25 to obtain a correlation value.

11. A direct sequence spread spectrum signal receiver comprising an antenna and an RF front-end including an analogue to digital converter for receiving spread spectrum signals and outputting corresponding signal
30 samples; and a signal processor according to any of claims 6 to 10.